

EDITION NO. 12
FEB 1887

MONTHLY WEATHER REVIEW.

VOL. XIV.

WASHINGTON CITY, DECEMBER, 1886.

No. 12.

INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States and Canada during December, 1886, based upon the reports from the regular and voluntary observers of the Signal Service and from co-operating state weather services.

Descriptions of the storms which occurred over the north Atlantic Ocean during the month are also given, and their approximate paths shown on chart i. In tracing the centres of the paths of these storms, data from the reports of one hundred and sixty-seven vessels have been used.

No ocean ice has been reported during the month in, or to the southward of, the trans-Atlantic routes.

On chart i for this month are traced the paths of eleven areas of low pressure; the average number for December during the past fourteen years being 12.4. No severe storm occurred during the month, although the storm of the 1st on the Lakes displayed considerable energy, and the low area that passed across the east Gulf states and southern part of the south Atlantic states on the 4th, and thence up the coast on the 5th and 6th, was notable for the very heavy snowfall that attended its passage through the Southern States.

The mean atmospheric pressure of the month is slightly above the normal over the greater part of the United States; the departures are comparatively large in the upper Mississippi valley, the Missouri Valley, and in Dakota and Minnesota.

From the one hundred and fifth meridian eastward the temperature of the air has been below the normal, westward of that meridian the month has been warmer than the average December.

The precipitation of December, 1886, is nearly normal in all parts of the country, except in California and the south Atlantic and Gulf states where it is deficient, and in the north Pacific coast region where it is excessive.

In the preparation of this REVIEW the following data, received up to January 20, 1887, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and thirty-three Signal Service stations and twenty-two Canadian stations, as telegraphed to this office; one hundred and sixty-five monthly journals; one hundred and fifty-nine monthly means from the former, and twenty-two monthly means from the latter; two hundred and ninety-three monthly registers from voluntary observers; forty-five monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs furnished by the publishers of "The New York

Maritime Register;" monthly weather reports from the local weather services of Alabama, Colorado, Indiana, Illinois, Iowa, Minnesota, Missouri, New England, Ohio, and Tennessee; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE.

[Expressed in inches and hundredths.]

The distribution of mean pressure for December, 1886, determined from the tri-daily telegraphic observations of the Signal Service, is shown by isobarometric lines on chart ii.

It will be seen from this chart that the mean pressure of the month is greatest over Dakota, Minnesota, the Missouri Valley, and the upper Mississippi valley; in these districts it averages 30.23, and varies from 30.20 to 30.25; another area of high pressure, enclosed by the isobar of 30.20, extends over southern Idaho, southeastern Oregon, and the northern part of Nevada and Utah. The area of minimum pressure covers the western part of Washington Territory, in this district the pressure averages about 29.95; at one station, Tatoosh Island, the mean pressure of the month is only 29.88. Another area of comparatively low pressure extends over New England and the Canadian Maritime Provinces; in these districts the mean pressure of the month varies from 30.08 at Boston, Massachusetts, and Block Island, Rhode Island, to 30.01 at Father Point, Canada.

The departures from the normal pressure are given in the table of miscellaneous meteorological data, and are also shown on chart iv by lines connecting stations of equal departure. The pressure of the month is above the normal in almost every district of the United States, but the excess is nowhere very great; the largest departures are found in the same region as the area of maximum pressure, viz., Dakota, Minnesota, the Missouri Valley, and the upper Mississippi valley, in this region the departures in excess of the normal vary from .08 at Fort Buford, Dakota, and Davenport, Iowa, to .13 at Bismarck, Dakota. The departures in the Lake region and in New England are comparatively large, varying from .04 at Block Island, Rhode Island, to .09 at Chicago, Illinois. The pressure in California, Nevada, Utah, and western Arizona is also in excess of the normal, the departures averaging .06. In the middle and south Atlantic states, Florida, and the Gulf states, the mean pressure is normal or very nearly so, no departures occurring in these districts larger than .03. In the northern plateau region and along the north Pacific coast the mean pressure of the month is below the normal, but the deficiencies are small, the largest departure being .10 at Tatoosh Island, Washington Territory.

As compared with the pressure of the preceding month very large differences, both above and below, occur in nearly all parts of the United States; in the northern plateau region and along the north Pacific coast the pressure for December averages about .20 below that of November, and varies from .16 below at Walla Walla, Washington Territory, to .28 below at Tatoosh Island, Washington Territory. Along the eastern slope of the Rocky Mountains and eastward to the Atlantic the pressure for December is considerably above that of November, the greatest increase is in Dakota, Montana, the Missouri Valley, and the upper Mississippi valley, and the Lake region, in these districts it averages about .17.

BAROMETRIC RANGES.

The monthly barometric ranges at the various Signal Ser-